

Report of the State Water-Supply Commission to the ...

New Jersey.
Water-Supply
Commission

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Delaware river nearly opposite the State House, Trenton. Showing the low stage of water. View taken November, 1909.

REPORT

OF THE

New Jersey.
**State
Water-Supply Commission**

FOR THE YEAR

1909

TRENTON, N. J.:
STATE GAZETTE PUBLISHING CO., Printers.
1910.

Commission.

FOSTER M. VOORHEES,	Elizabeth, N. J.
GEORGE F. WRIGHT,	Paterson, N. J.
J. H. BACHELLER,	Newark, N. J.
RICHARD MORRELL,	Passaic, N. J.
HARRY R. HUMPHREYS,	Camden, N. J.

Consulting Engineer,

MORRIS R. SHERRERD, Newark, N. J.

Secretary,

CHARLES H. FOLWELL, Mount Holly, N. J.

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Report of the State Water-Supply Commission.

To His Excellency, Hon. John Franklin Fort, Governor of New Jersey:

In submitting this its third annual report, as required by statute, the Commission would once more respectfully call attention to what it has said in previous years concerning the urgent need of conserving the potable waters of the State. During the past two years there has been manifest a gradual awakening to the importance of this subject. In view of the recent decision of the courts of our State, and the attention that has been given to the matter in the public press, the interest has become much more widespread. The rapid increase in the population of the State causes the problem to be one of more than unusual interest. The State has shown a more rapid proportionate rate in growth than any of its neighbors. As indicating how rapid has been the increase, the following table has been compiled from the State Census of 1905 and the Federal Census for the years 1850, 1860, 1870, 1880, 1890 and 1900. This relates only to several of the counties in the metropolitan district of northern New Jersey:

	1850.	1860.	1870.	1880.	1890.	1900.	1905.
Passaic	22,577	29,011	46,468	68,860	105,046	155,202	175,856
Bergen	14,708	21,618	31,033	36,786	47,226	78,441	100,003
Essex	73,995	98,875	143,907	189,929	256,098	359,053	409,928
Hudson	21,874	62,717	129,288	187,944	275,126	386,048	449,879
Union .....	.....	27,780	41,891	55,571	72,467	99,353	117,211
Total	133,154	240,001	392,587	539,090	755,963	1,078,097	1,252,877

As illustrating how fast has been the increase in urban population, the number of inhabitants in several of the larger cities in these counties is shown in the next summary compiled from the same sources as the table above:

REPORT OF THE

	1850.	1860.	1870.	1880.	1890.	1900.	1905.
Paterson	11,334	19,586	33,579	51,031	78,347	105,200	111,529
Passaic				6,532	13,028	27,800	37,837
Bayonne			3,834	9,372	19,033	32,722	42,262
Montclair			2,853	5,147	8,656	13,950	16,370
Harrison	1,344	2,556	4,129	6,898	8,338	10,600	12,823
Kearny			974	777	7,064	10,876	13,601
West Orange ...			2,106	3,385	4,358	6,889	7,872
Jersey City	6,856	29,226	82,546	120,722	163,003	206,433	232,699
Newark	38,894	71,941	105,059	136,508	181,830	246,070	283,289
Hackensack	3,486	5,488	8,039	4,248	6,004	9,443	11,098
Englewood				4,076	4,785	6,253	7,922
Total	61,914	128,797	243,139	348,696	494,446	676,236	777,302

Based upon the percentage of growth in the counties above named, it is fair to assume that when the next Federal Census is taken in 1910 the population of these counties will have increased to 1,500,000 and the number of inhabitants of the cities will have become at least 900,000. It is to be borne in mind that in many of the cities there is now shown a growth far more rapid than the average rate of increase in the others.

From the metropolitan districts of the neighboring States of New York and Pennsylvania are coming many thousands of home seekers. The manifold natural advantages of the State furnish potent inducements for this movement in population. No one inducement can be more important than the sufficiency and purity of the potable water-supply. The water furnished by public and private supplies within the counties above mentioned is at the rate of approximately one hundred and thirty-five millions gallons daily (135,000,000), and the quantity which will be needed will rapidly increase as the population grows. In the past the State has been able to boast of its undefiled watersheds and the inexhaustible sources of its waters. The onrush of population, the increased opportunities for pollution and the threatened exhaustion of the supply bring with them the serious problem not only of protecting our supplies for present day needs, but also of devising a provident plan to so conserve those remaining as to assure an ample and wholesome supply for the future. It was with this in mind that the Commission entered somewhat exhaustively into the subject of conservation, more particularly with reference to the waters in the northern end of the State. The services of eminent engineers were secured and it was their unanimous judgment that in the Passaic valley, with its unsurpassed natural ad-

vantages and the purity of its water, was to be found the best starting point for the system of State conservation of potable waters which could eventually be extended from Sussex to Cape May. It is unnecessary to more than refer to their plans and recommendations as reported. These have already been submitted in great detail in the previous reports of the Commission. As to the importance and the necessity of conservation, your Commission still maintains the position heretofore assumed by it. The inauguration of any plan for the storage of water in adequate reservoirs from which it may be distributed as the growing needs of the public demand must be deferred until the creation of a district.

The necessity and wisdom for so doing at an early date has been clearly demonstrated more than once during the year last past from the facts disclosed during hearings on applications considered by the Commission. The most important and desirable source of water-supplies in the Passaic valley, which has not yet been acquired by municipalities or private corporations and is therefore still in a qualified sense under the control of this Commission, is that furnished by the Wanaque river. The applications for the grant of the right to use this source of supply, which were made by two municipalities already abundantly provided from sources owned by them or by private companies owning abundant sources, demonstrated that their present supplies would be sufficient for several years to come.

It is not the intention of the Commission to criticise, but, on the other hand, it would commend the motives which prompted those in authority to strive to obtain by their action supplies for the future needs of the communities in whose behalf they acted. The objection to granting the request of either of the municipalities is to be found in the fact that the supplies sought for are far in excess of their needs for many years and by making a grant to either injustice to others would without doubt result.

The grant of the application would have been in effect a surrender of rights of the State, the value of which, in the not very far distant future, will be represented by many millions of dollars. One of the applicants now has under its control a watershed and works for its own supply, which it acquired twenty years ago at a cost of \$6,000,000, and with its distribution system has cost about \$12,000,000. Its consumption of water to-day is about 36,000,000 gallons daily. From very careful estimates it is safe

to assume that this supply now pays fixed charges on a valuation of \$15,000,000 and its reserve supply is worth \$5,000,000 additional. The Wanaque shed with the capacity of development as proposed would be capable of yielding 70,000,000 gallons daily, at a cost of not more than \$6,000,000. At the end of twenty years it should pay fixed charges on a valuation of at least twice this sum. Under these circumstances the Commission felt it unwise to grant to either applicant this enormously valuable franchise, the earnings of which in twenty years would represent a capitalization of at least \$12,000,000.

One of the applicants has under its present developed supply a capacity of 50,000,000 gallons daily. If its present sources of supply were developed to their ultimate capacity, it would have an additional supply of 10,000,000 gallons daily. The average daily consumption is now 36,000,000 gallons. In other words, its present supplies are 14,000,000 gallons a day more than its requirements and this may be developed to 24,000,000 gallons per day more than its present consumption. Under the plans presented by it for the development of the waters of the Wanaque, there was contemplated the acquisition of a supply capable of furnishing at least 60,000,000 gallons daily. Thus would its supplies have been increased to more than 74,000,000 gallons daily above its present requirements. And it should not be forgotten that if the application had been granted, not only would this municipality have pre-empted sources of supply far in excess of its present needs, but it would have deprived other communities whose needs might in time become equally great of the power to acquire a supply for themselves or have forced them to go to the municipality to whom the grant might have been made.

In the other case that came before the Commission for the right to take the same waters, it was disclosed that the average daily consumption at the present time was about 9,000,000 of gallons daily. Under the plan presented by this applicant it sought for permission to so conserve the waters of the Wanaque as to provide and supply at least 70,000,000 of gallons daily, more than seven times as much as are its needs at present.

Believing, as it did, that the present necessities of neither of these municipalities were of such an urgent and pressing nature as to demand the granting of the exclusive privilege asked for, and that the plans were not "justified by public necessity or reasonably



Raritan river above Somerville. Showing the low stage of water. View taken November, 1909.

anticipated public use," the Commission could only refuse the application of each.

If the Legislature should deem it wise to create a water district or districts as in the manner hereinafter suggested, it would be possible for the Commission to adopt and carry out plans whereby these waters could be stored and disposed of from time to time in sufficient quantities upon equitable terms, not only to the communities whose applications the Commission was reluctantly forced to decline, but to other municipalities as their needs might hereafter arise. This distribution could be made in such a manner and in such quantities as would not consume the whole supply in many years to come, basing quantity consumed upon the present and the probable growth of the communities dependent upon such a supply. It is true that the Commission can under existing law prevent the pre-emption of the waters of new sources of supplies by one municipality to the exclusion and consequent injury of others, but until the districts are created it is without power to provide for a wise distribution of the same.

Opinions may differ as to what shall be the area embraced within the district. The plan of creating the district by uniting several political divisions or parts thereof into one had its advocates in the earlier consideration of the problem. This plan, however, met at once with vigorous objection on the part of those to be affected. It was urged that under it a share of the costs of obtaining a supply for the communities embraced within the district who were in need thereof would have to be borne by others within the district who had already assumed a burden in providing supplies for their own wants. In this way a double burden would be imposed. The varying and antagonistic interests of the several divisions or parts of divisions which might together comprise the district would make it extremely difficult to secure the adherence of all to this plan.

It is submitted that the better plan and one which would meet all reasonable objection and be the easiest of realization would be to authorize the creation in the first instance of a district which should comprise only the lands to be occupied by the site of the proposed reservoir, together with such other lands as might be required for a site for the dam and necessary structures and to provide against pollution. In order to safeguard it, legislation should be enacted whereby the Commission would have no power to incur

any indebtedness until it should have first ascertained that the revenues to be derived would warrant the erection and operation of the reservoir and works and until the raising of the funds necessary for that purpose should have first been assured. There should be given to the Commission power to negotiate provisional contracts with municipalities in need of new or additional supplies and arrange with them for providing means in amount sufficient to warrant the beginning of the work. When these were assured the law should enable the Commission to proceed with the development of the plan. It should also be made lawful for any municipality to enter into such contract and to provide for raising its proportionate share of the necessary funds for the acquisition of lands and the commencement of the works. The Commission should then have power to pledge the reservoir and its appurtenances, together with the water rights, as security for the payment of the bonds by it issued from time to time for the completion of the works. Provision should also be made whereby the revenues derived from the contracts should be applied to the payment of the cost of maintenance and interest charges and then to the payment of the advances made by the municipalities. A sinking fund should have place in the plan whereby the bonds issued could be retired and the State become eventually the owner of the reservoir free from indebtedness. The plan is here outlined only in a general way, but it is one which seems to be practicable and does not require any guarantee on the part of State, the legality of which is extremely doubtful.

If adopted, the Commission at first would simply erect reservoirs, impound the waters of the State, provide for compensation for riparian and flowage rights and deliver water at its reservoirs to those needing it from time to time in sufficient quantities for their wants and at prices which, while affording a living profit, would not be subject to the dictation of those who are now alone able to furnish the supply.

If the district for the Wanaque only should be created upon the lines indicated, the Commission would have at its disposal a supply to furnish at least 70,000,000 gallons daily. It could distribute the waters in such manner as needed, not to one municipality only but to the many, even to those whose present supplies it is claimed will not long continue sufficient. This plan of conservation and distribution is one which it is believed will commend itself as one

far better than that which would permit the taking of this great supply to the exclusion of others by any single municipality whose present needs do not require the one-seventh part of it and whose future needs will not in all human probability require as much as the half of it, for nearly fifty years to come.

The mere statement of the foregoing fact is an incontrovertible argument in favor of the early creation of a district or districts such as is recommended, if this invaluable source of supply is to be conserved so as to afford the greatest good to the greatest number. The urgency of such action is also evident if the equitable distribution of these waters is to be secured, from the fact that the use of a part of them will soon be necessary for the rapidly growing communities of this part of the State. Unless the policy be inaugurated in the immediate future, the right to use some of them must soon be granted if justice is to be done to the municipalities which will early need them or which depend on companies now obligated to supply certain districts of this territory. The plan of establishing a reservoir at Mountain View has the most to commend it in the opinion of the Commission. It will give protection against flood damage and furnish the means of impounding the greatest quantity of water at the least relative cost. The watershed has an area of 380 square miles while the Wanaque embraces only 83. Several other sites are available, but they are more removed and the watersheds contiguous thereto are much less in extent. In the Mountain View reservoir there could be stored sixty-five billions (65,000,000,000) of gallons with a daily yield of two hundred and fifty millions (250,000,000) while the storage capacity of the Wanaque reservoir would be only eleven billions (11,000,000,000) with a daily yield of about seventy millions (70,000,000). The time when the needs of the general public would tax the capacity of the reservoir is not far distant as measured by the lapse of time in the growth of the State. The quantity of water furnished by public and private supplies in 1905 to the communities who will eventually and of necessity be dependent in whole or in part on the waters of the reservoir was about one hundred and five millions (105,000,000) daily, and in 1910 on the same basis of supply, the amount required will be about one hundred and thirty-five millions (135,000,000) a daily increase of thirty millions (30,000,000). The present sources are capable of furnishing a supply sufficient to meet this increase, but no more. Assuming the same

rate of increase in daily consumption of water, which must be obtained from sources other than the present, it will have reached approximately 40,000,000 gallons in five years thereafter and for each succeeding five years such increase in daily average will be more rapid. The consumption of the two hundred millions (200,000,000) of gallons, the daily capacity of the proposed reservoir, allowing fifty millions (50,000,000) to be released in order to maintain the low flow of the Passaic, will have been attained about the year 1930. If water be furnished at the rate of \$25 per million gallons, the revenues capitalized at four per cent. would represent a plant worth at least thirty-five millions of dollars (\$35,000,000).

The Commission would urge early action on the score of economy. The lands necessary for any site can now be acquired and the works built at much less expense than at a later period. Each year's delay will inevitably add to the cost.

The creation of any district is beset with difficulties, but they are not insurmountable. Vested interests, the exact nature and extent of which are uncertain, must first be settled. They are now the subject of judicial consideration. Their determination may be looked for in the not far distant future and they may be so defined as to make it easy to put the plan into effective execution. However they may be defined, their acquisition certainly cannot bring such a burden of cost as to make the eventual establishment of the district impossible for the State and the many flourishing municipalities whose welfare will be so vitally affected.

The duties of the Commissioners are specifically defined in the act of the Legislature approved June 17th, 1907. They may be subdivided into four classes, namely, supervision over all the sources of potable and public water-supply, the determination of the necessity for new or additional water-supplies and an equitable apportionment of such supplies, supervision over municipalities, companies and individuals diverting or selling water, and the levying of a reasonable charge for excess diversion, and investigation as to the advisability of the establishment of a system of State conservation.

Frequent requests are made of the Commission for advice and other information concerning the making of application for new or additional supplies. In such cases the Commission places its services, the data on file in the office and the services of its officers

and employes at the disposal of intending applicants so far as appears reasonable.

It has been the aim and practice of the Commission to aid communities in need of new or increased water-supplies rather than to retard them, and whenever possible the permission sought has been given, care being had at all times to safeguard the interests of other communities which might have need of water from the same sources. In the latter connection an innovation put in practice promises to be attended by very satisfactory results in the future. This is the limiting of grants to corporations other than municipalities to a term of years. In this manner the State retains a more direct interest in its watersheds and franchises not now so valuable but which will grow in value as years pass and be subject to renewal only upon such terms and conditions as will appear reasonable in view of altered conditions.

During the past year the increasing number of applications from municipalities and corporations desiring new or additional water-supplies has necessitated many public hearings. Nearly all of these meetings have been held in the communities from whence the application came. Four applications have been granted and three refused. The Commission has endeavored to protect with equal fairness the interests of all communities affected. The assertion of the State's right to all unappropriated watersheds and its endeavors to secure an equable division of the potable water-supply among the communities needing it, is now generally regarded as the only manner by which the rights of all can be effectually protected. A brief summary of the action of the Commission upon the applications for new or additional water-supplies during the year here follows:

BRANCHVILLE.

The borough of Branchville having put in an application for a new water-supply, to be derived from Dry brook in Sussex county, the Commission appointed a time for a hearing to be held at Branchville. At this hearing some opposition developed as to the plan proposed by the borough. Counsel appeared in favor and in opposition to the grant and many witnesses were heard. An inspection of the watershed and the stream was made. The Com-

mission made the grant, at the same time imposing conditions as to the maintenance of the dry season flow, designed to adequately protect the rights of property owners below the point of intake.

In granting Branchville's application the Commission stipulated that "the low flow of the stream (from which the supply is to be derived) shall be maintained at all times and, in case said borough shall at any time hereafter abandon this source of supply, all rights hereby granted shall revert to the State, it being distinctly understood and agreed that this grant is made to the borough of Branchville alone and shall not be assigned or set over to any corporation or person without first obtaining the consent of this Commission."

TOTOWA.

On July 13th, the borough of Totowa, Passaic county, and the Passaic Water Company jointly filed a petition asking that authority be extended to the latter corporation to supply the citizens and the borough of Totowa with water. A public hearing was held in the borough on Tuesday, August 10th, at which there were no objectors to the application, and on August 24th a permit was granted upon conditions safeguarding the interests of the State.

NEWARK.

An application accompanied by maps was filed on July 13th, on behalf of Newark asking for permission to appropriate the Wanaque watershed in Passaic county as an additional source of supply for the city. A hearing was held in the city on Tuesday, August 24th. At the hearing many speakers urged the claims of the applicant, while others from Paterson, Midvale and elsewhere spoke in protest against the granting of the application. Adjourned hearings were later held at Midvale and Paterson upon the request of citizens, and on October 5th, in pursuance of the Commission's previously outlined policy "to grant no new or additional water-supply in the Passaic river watershed pending the establishment of the project for a comprehensive conservation of the State's waters in such watersheds," the application was refused. Other reasons which prompted the Commissioners are set forth in the foregoing pages of this report.

LOPATCONG WATER COMPANY.

On July 13th, the Lopatcong Water Company, of Phillipsburg, Warren county, applied for permission to supply the residents of Stewartsville with water. A public hearing was held and the watershed and reservoir of the company were visited by the Commission. Means of meeting the objections of the only property owner appearing in opposition to the application were suggested by the Commission and the application was granted, with the stipulation that the low flow of the stream must be maintained at all times.

HIGH BRIDGE.

The borough of High Bridge also filed its application for permission to use a new water-supply. An inspection of the watershed and site of the proposed reservoir was made by the Commissioners and the grant made with conditions looking toward the protection of riparian owners.

PATERSON.

The city of Paterson also applied for permission to appropriate a part of the Wanaque watershed. After a public hearing, influenced by its reasons for refusing the request of Newark for practically the same waters, the Commission refused to make the grant.

HADDONFIELD.

The Haddonfield Water Company applied for permission to obtain an additional water-supply from the north branch of Cooper's creek in Camden county. Permission was denied on the ground that inasmuch as the borough of Haddonfield had completed plans and works for a municipal supply and the said application did not appear to be in reasonable anticipation of the needs of the communities furnished by the company, the appropriation of that source of supply might operate to the injury and exclusion of Haddonfield and nearby communities.

The Commission has furnished intending applicants with forms and information concerning the manner of procedure to be followed in such number as would seem to indicate that the coming year will witness very much greater activity in this division of its work than any time since the creation of the Commission. It will be the policy of the Commission to hold its hearings in the communities from which the applications come, so far as the funds available for this work will permit.

DIVERSION OF WATERS OUT OF THE STATE.

The Commission, having had its attention drawn to the proposed diversion of waters out of the State, called upon the company seeking to divert the same to file with the Commission plans of its proposed works and distributing system. Complying with the Commission's request the company filed plans, and the company's president, together with counsel and others connected with it, appeared before the Commission. Application for approval of its plans being received, the following questions were submitted to the Attorney-General:

1. "Has the State Water-Supply Commission jurisdiction over waters procured from driven wells?
2. Has it power to grant the right to divert out of the State waters procured from driven wells?
3. Has it the right to consent to the diversion of such waters out of the State?
4. Has it the right to consent to such diversion, if such waters be commingled with surface waters, provided means be taken to accurately determine the exact quantity of water obtained from subterranean sources and such quantity only be diverted?"

The reply of Attorney-General Wilson to questions 1, 2 and 3 was, in effect, the act creating the State Water-Supply Commission confers no control or jurisdiction over water procured from driven wells.

His answer to question 4 expresses the opinion that if the Commission finds as a fact that the plan of diversion and distribution therein referred to involves the actual delivery into another State by conduits or otherwise of water taken from "any fresh-water lake, brook, creek, river, or any stream of this State," such diver-



Intake dam and gate house at the beginning of the pipe lines supply, the City of Newark. During dry periods water is drawn from three large storage reservoirs and allowed to flow down to this intake.

sion and distribution is made unlawful by a legislative enactment and the consent of the Commission must be withheld. So far as the delivery and distribution of water emanating from subterranean sources into another State by conduits or otherwise is concerned, the Attorney-General was of the opinion that the matter is one in respect to which the Commission has no jurisdiction or control.

Following the receipt of these conclusions from Attorney-General Wilson, the Commission adopted two resolutions, one refusing the application of the Hudson County Water Company to divert surface water to be commingled with subterranean water from this State to Staten Island.

The other resolution served notice on any and all water companies or corporations proposing to divert water from this State that immediately upon such diversion this Commission would request the Attorney-General of this State to commence injunction proceedings against them. In answer to the query of the Commission whether the injunction against the diversion of surface water theretofore granted was still in force, the Attorney-General replied that the injunction continued to hold, but as to the actual or proposed diversion of subterranean water from the State, the Commission was vested with no jurisdiction. The Commission, therefore, adopted the following resolution:

"Be it Resolved, That the Attorney-General be respectfully requested to ascertain if recent acts of the Hudson County Water Company, laying mains in Jersey City, are in violation of the injunction granted by the Court of Chancery on the day of August 22d, 1905, and if, in his judgment, the acts of the company are such as will warrant him in instituting contempt proceedings in such court, he be requested to commence the same."

On October 19th, 1909, the Commission met with Governor Fort and a number of municipal officers from Newark and Jersey City in conference over the proposed diversion of water to Staten Island by the company, furnishing data and proffering the services of its consulting engineer.

THE RIGHTS OF THE STATE AND THE EAST JERSEY WATER COMPANY.

At the instance of the Commission proceedings in chancery have been instituted by the Attorney-General in behalf of the State to ascertain the rights, privileges and powers of the East Jersey Water Company. Widely different opinions are held as to the character and extent of these rights. If the plan for conservation of waters in that part of the State wherein the company exercises its franchise is to be carried out to the fullest extent possible, it is necessary that these rights should first be judicially ascertained. Their exact extent and the waters and quantity thereof which may be diverted by the respective parties will be disclosed in these proceedings. The field of operation of the Commission will be no longer problematical. In fairness to all whose interests are involved and in order that the State may be advised of what its rights really are, it will be well to have all doubts removed and the subject-matter of the controversy set at rest by the determination of the courts.

The subject has been one of so much dispute and contrariety of opinion that it is thought that popular interest will justify the insertion in this report of a brief history of the case between Edmund Wilson, Attorney-General of the State of New Jersey, informant, and the East Jersey Water Company, defendant.

The East Jersey Water Company was incorporated under the laws of New Jersey, August 1st, 1889. The incorporators were Charles Hartshorne, John B. Garrett, Henry S. Drinker, Thomas N. McCarter, Louis R. Barrett, John Hood and David G. Baird. The total amount of the capital stock of this company and the amount with which it commenced business was three million (\$3,000,000) dollars. The articles of incorporation declare that the company was organized to do business in the counties of Essex, Union, Morris, Passaic, Hudson and Bergen. The principal office of the company is in the city of Newark. The object of the company is to store, sell and deliver water; to construct and maintain the necessary reservoirs, pipe lines and other works therefor; the acquisition of property, real and personal, with the power to lease, sell, mortgage and convey the same.

Information filed with Chancellor Pitney in behalf of the State by Attorney-General Wilson sets out the above-stated facts and de-

clares "that the tenth section of the act of the Legislature of this State under which the said East Jersey Water Company was incorporated, and said section was amended by an act approved on the 29th day of February, 1888, among other things provides that it shall be lawful for three or more persons to associate themselves into a company for the purpose of constructing and maintaining works for the special purpose of supplying water to communities, manufacturing establishments, &c. ; to dam rivers and streams and to carry on the business of a water distributing company. It was provided that this act shall not apply to any river or stream of a less width and volume than the Delaware river ordinarily at Phillipsburg in this State below its junction with the Lehigh river, nor to any river or stream below the head of tidewater in the same." In behalf of the State Attorney-General Wilson says that the East Jersey Water Company has established extensive works at Little Falls on the Passaic river in the State of New Jersey, and daily diverts from the Passaic river several million gallons of water, and that the Passaic river at Little Falls is of less width and volume of water than the Delaware river ordinarily at Phillipsburg, in this State, below its junction with the Lehigh river, and that the East Jersey Water Company is diverting water from the Passaic river at Little Falls for the purpose of supplying the inhabitants of Bayonne, Harrison, East Newark, Kearny, Nutley and Little Falls with water for domestic use without any warrant or lawful authority, either under the certificate of incorporation or any act of the Legislature of this State. On the strength of this information Attorney-General Wilson prayed that the court enjoin the East Jersey Water Company from diverting water from the Passaic river at Little Falls.

In answer to this information and prayer the East Jersey Water Company, through its counsel, admits its incorporation by certificate filed August 1st, 1889. It says that the tenth section of the act entitled "An act concerning corporations," referred to in the information as having been amended on February 29th, 1888, contains an amendment incorporated by chapter 90 of the laws of 1876, which chapter while in the form of a supplement to "An act concerning corporations," is in effect an independent act providing for the damming of the Delaware river below Phillipsburg and the development of water power and other hydraulic works thereof, and this defendant claims no right to exercise such powers

on the Delaware river, and that its powers are found in the act under which it is established, outside of the provisions of said chapter 90 of the laws of 1876 for the damming of the Delaware river.

It admits the establishment of works at Little Falls on the Passaic river in this State and the construction of a pumping station there, and says that it is the owner of an undivided one-quarter interest therein. It admits, also, that it daily pumps from the Passaic river to said point water for the purpose of supplying the inhabitants of Bayonne, Harrison, East Newark, Kearny, Nutley and Little Falls for domestic and public use to the amount of about eight million (8,000,000) gallons, and that the said water is so pumped and supplied by virtue of lawful contracts made by the East Jersey Water Company with the various municipalities supplied.

It admits that the Passaic river at Little Falls is of less width and volume of water than the Delaware river ordinarily at Phillipsburg, in this State, below its confluence with the Lehigh river. It insists that its diversion of water from the Passaic river at Little Falls for the purpose of supplying the above-mentioned municipalities is lawful.

It contends that the municipalities above mentioned had the legal right to contract with the East Jersey Water Company for a water-supply.

The answer contains a detailed history of the East Jersey Water Company, its property holdings, and the scope of its business operations.

The company says that "the cause of action, if any, of the informant arose when the supply of water from the Passaic, through the pumping of this defendant first began, and the State and public acquiesced therein, and the informant is now estopped from maintaining this suit. The delivery of water by this defendant from the Passaic watershed for the use of the municipalities named in the information began in every case within a year after the making of said contracts. The purchase of the falls and water power at Little Falls and the improvement thereof, and the installment of a pumping station there, and the objects thereof, were well known to the public and the State officials pending construction. By a contract dated April 22d, 1897, between this defendant and Jersey City, this defendant agreed to supplement its sup-

ply to Jersey City from the Newark main with water drawn from the Passaic above the Great Falls, within six months thereafter, and within eighteen months from date of said contract to complete works for taking water for said city at Little Falls, which contract was officially published and generally known, and was carried out within the time mentioned.

"The several contracts of the municipalities named in the information and the suits to determine the validity of such contracts were well known, pending said suits, to the public and State, before work began to fulfill said contract. The pumping of water from the Passaic river at Little Falls to supply the water in performance of said contract was a matter of general notoriety and well known to the State and its officials from the beginning thereof. The annual report of the State Geologist to the Governor for the year 1905, which was printed and widely circulated by the State as an official document, contained a description of the works of this defendant, and stated the amount of diversion thereby at Little Falls, and the municipalities whose supply was taken therefrom.

"No objection to said pumping, nor to any of said contracts, nor to any of the operations of this defendant or other diversions of water from the Passaic river for the use of the municipalities named in the information, was ever made by the Attorney-General or by anyone on the part of the State or public until the filing of the information herein. Wherefore, this defendant says that the relief prayed for in the information is barred by the delay and acquiescence."

This defendant says that no cause or ground for equitable relief is shown in the information and that no rights of the State of New Jersey are affected by the matter set forth therein, and that the information, therefore, ought to be dismissed, and this defendant claims the same benefit and advantage of his answer as if he had filed a demurrant to said information. The defendant prays that said information be dismissed, with costs.

WATER COMPANIES.

Under and by virtue of the act creating the Commission and defining its duties, supervision over all of the companies diverting and dealing in water other than that derived from underground

sources has been maintained. Quarterly reports from all such companies are required and the data thus obtained is tabulated in the office of the Commission. In a number of instances inability to keep an accurate record of the amount of water diverted is pleaded by the company officials and where possible the engineer has visited the pumping stations or company offices for the purpose of giving instruction as to the manner of keeping such records. It should not be lost sight of that in the maintenance of this department lies the future certainty of substantial returns to the State through the charge to be levied for excess diversion. Already, as shown elsewhere in this report, a number of water companies are debtors to the State for water taken in excess of the per capita allowance fixed by law. This aggregate sum is larger than was returned last year and every succeeding year the increase will be proportionately greater until, within a comparatively short period, the returns to the State from this source alone will exceed the cost of maintenance of this entire department.

Accepting the Attorney-General's interpretation of the law under which the Commission is operating, reports are only exacted from these companies deriving their water-supply from surface sources.

There are fifty-eight municipalities and companies supplying water and reporting to the Commission. Of this number all have surface sources of supply, either in whole or in part.

The municipal water departments and water companies now doing business within the State and their sources of supply are to be found in the following list:

<i>Name of Company.</i>	<i>Source of Supply.</i>
Acquackanonk Water Company	Surface.
Allenhurst, Borough of	Combination.
American Snuff Company	"
Asbury Park, City of	Underground.
Atlantic City	Combination.
Atlantic Highlands, Borough of	Underground.
Avalon, Borough of	"
Bay Head Artesian Water Company	"
Beach Haven, Borough of	"
Belmar, Borough of	"
Belvidere Water Company	Surface.
Bergen Aqueduct Company	Underground.
Bogota Water and Light Company	"
Bordentown, City of	"
Water-Supply System of Abel Bottoms	"

<i>Name of Company.</i>	<i>Source of Supply.</i>
Bound Brook Water Company	Combination.
Branchville, Borough of	Surface.
Bridgeton, City of	Underground.
Browns-Mills-in-the-Pines Company	"
Buckhorn Springs Water Company	Surface.
Burlington, City of	"
Butler Water Company	"
Camden, City of	Underground.
Camden County Water-Supply Company	"
Cape May City	"
Chatham, Borough of	"
Clayton-Glassboro Water Company	"
Cape May Improvement Company	"
Clinton Water and Water-Supply Company	Combination.
Commonwealth Water and Light Company	Underground.
Copeland, H. C.	"
Corson's Inlet Water Company	"
Delaware River Water Company	"
Dover, Town of	Combination.
East Jersey Water Company	Surface.
East Jersey Coast Water Company	Combination.
East Orange, City of	Underground.
Elizabethtown Water Company	Combination.
Essex Fells Electric Light and Water Company	Underground.
Flemington Water Company	Combination.
Freehold, Town of	Underground.
Frenchtown, Borough of	"
Garfield, Borough of	"
General Water-Supply Company, Collingswood	"
General Water-Supply Company, Egg Harbor City	"
German Valley Water Company	"
Glen Gardner Water Company	"
Gloucester, City of	Combination.
Hackensack Water Company	Surface.
Hackettstown, Town of	Combination.
Haddonfield Water Company	Underground.
Hammonton, Town of	"
High Bridge, Borough of	Surface.
Hightstown, Borough of	Underground.
Hudson County Water Company	Surface.
Hopewell, Borough of	Underground.
Island Heights Water, Power, Gas and Sewer Company	"
Jersey City Water-Supply Company	Surface.
Junction Water Company	Combination.
Keyport, Town of	Underground.
Lambertville Water Company	Surface.
Laurel Springs Water-Supply Company	Underground.
Little Falls Water Company	Surface.
Lodi Water Company	Underground.
Longport Water and Light Company	"
Lopatcong Water Company	Surface.
Lumberton Light, Water and Sewerage Company	"

<i>Name of Company.</i>	<i>Source of Supply.</i>
Madison, Borough of	Underground.
Manasquan, Borough of	Combination.
Marlton Water Company	Underground.
Medford Water Company	Surface.
Mendham, Borough of	"
Merchantville Water Company	Underground.
Middlesex Water Company	Combination.
Millville Water Company	Surface.
Montclair Water Company	"
Moorestown Water Company	"
Morris Aqueduct Company	Combination.
Mount Holly Water Company	Surface.
Newark, City of	"
New Brunswick, City of	"
New Jersey Suburban Water Company	"
Newton, Town of	"
New York and New Jersey Water Company	"
Ocean City Water Company	Underground.
Oram, R. F. Water-Supply System of	"
Orange, City of	Surface.
Orange Water Company	"
Passaic Water Company	"
Paulsboro Water Company	Underground.
Pemberton Township Water, Sewerage and Light Company	Surface.
Pennington Spring Water Company	Underground.
Pennsgrove Water-Supply Company	"
Peoples Water Company (Millville)	"
Peoples Water Company (Phillipsburg)	Surface.
Perth Amboy, City of	Combination.
Piscataway Township Water Company	Surface.
Pitman Water Company	Underground.
Plainfield-Union Water Company	"
Pleasantville Water Company	Surface.
Point Pleasant, Borough of	Underground.
Princeton Water Company	"
Rahway, City of	Surface.
Raritan Township Water Company	"
Red Bank, Town of	Underground.
Riverton and Palmyra Water Company	"
Rockaway, Borough of	Surface.
Rockland Water Company	Underground.
Salem, City of	Combination.
Scott, Job. Water-Supply System of	Underground.
Sea Isle City Water Company	"
Senside Park, Borough of	"
Short Hills Water Company	"
Smith, H. B. Machine Company	"
Somerville Water Company	Surface.
South Amboy, Borough of	Combination.
South Atlantic City, Borough of	Underground.
Spring Lake, Borough of	"
Stockton Water Company	"



Bed of Pasaic river just below Great Falls at Paterson, showing the diversion of the entire flow of the river. View taken November, 1909.

<i>Name of Company.</i>	<i>Source of Supply.</i>
Sussex, Borough of	Surface.
Tintern Manor Water Company	"
Trenton, City of	"
Tuckerton Water Company	"
United Water Company	Combination.
United Water-Supply Company	"
Ventnor, Borough of	Underground.
Vineland, Borough of	"
Vincetown Water Company	Surface.
Wallington, Borough of	Underground.
Washington Water Company	Surface.
Watchung Water Company	Underground.
Wenonah Water Company	"
Westville and Newbold Water Company	"
Wildwood Water Works	"
Woodbine Land and Improvement Company	"
Woodbury, City of	Surface.
Woolwich Water Company	Underground.
Wrightstown Water, Electric Light and Sewerage Company.....	"
Yantacaw Water Company	Surface.

UNDERGROUND WATERS.

In its work of compiling and checking the waters used by the different municipalities and companies of the State, the Commission has found it difficult to determine the amounts drawn from streams and from underground sources where both sources of supply are resorted to. It has been advised by the Attorney-General that it has no jurisdiction over the underground waters. In view of the importance and the extent of the use of such waters for public purposes, the Commission would recommend that the Legislature extend its authority so as to embrace these waters.

REVENUE DUE THE STATE FOR EXCESS DIVERSION.

The following table will show the municipalities and companies which are liable for water diverted in excess of the limit fixed by law. The charge by the State is not exacted, however, until the municipality or company diverts in excess of the amount being taken at the time of the approval of the law, June 17th, 1907, and also exceeds in quantity one hundred gallons per capita daily, according to the census of 1905. The annexed table shows that ten municipalities and companies have diverted in excess of the limit permitted without charge for the year ending June 30th, 1909.

REPORT OF THE

	Population of communities supplied. Census 1903.	Average daily consumption for year ending June 30, 1907.	Allowance based on census of 1905, 100 gallons per capita.	Average daily consumption for year ending June 30, 1909.	Average daily excess over 100 gallons per capita on population of 1905, being amount diverted for year ending June 30, 1907.	Chargeable total excess consumption for year ending June 30, 1909, in mll. gals.
<i>Surface Supplies.</i>						
Acquackanonk Water Co.....	43,560	3,502,500	4,356,000	4,366,000	10,000	3.65
Burlington, City of.....	8,038	800,000	803,800	916,267	112,467	41.05
East Jersey Water Co.....	79,149	7,850,000	7,914,900	7,700,000	0	0.00
Hackensack Water Co.....	213,494	21,712,166	21,349,400	18,732,002	0	0.00
Jersey City Water-Supply Co.....	232,699	38,400,000	23,269,900	39,200,000	800,000	292.00
Montclair Water Co.....	39,189	2,601,666	3,918,900	2,670,000	0	0.00
Newark, City of.....	290,921	36,241,666	29,092,100	35,300,000	0	0.00
New Brunswick, City of.....	23,847	2,566,371	2,384,700	2,910,212	343,841	125.50
Passaic Water Co.....	113,440	12,640,000	11,344,000	14,725,000	1,485,000	†542.02
Somerville Water Co.....	8,736	1,293,335	873,600	1,300,075	96,740	35.31
Tintern Manor Water Co.....	*23,626	3,694,166	.....	4,134,866	440,700	160.85
Lopatcong Water Co.....	Not known.	400,000	.....	440,000	40,000	14.60
Trenton, City of.....	80,180	14,200,000	8,918,000	15,860,101	1,660,000	605.90
Woodbury, City of.....	4,560	593,963	456,000	622,064	28,101	10.25
<i>Combination Supplies.</i>						
Elizabethtown Water Co.....	63,526	8,166,776	6,352,600	9,780,050	1,613,274	588.84
Middlesex Water Co.....	17,507	1,313,586	1,750,000	2,721,630	971,630	354.64
Perth Amboy, City of.....	32,153	5,037,088	3,215,900	4,337,406	0	0.00
Atlantic City.....	*37,593	6,517,916	.....	6,112,886	0	0.00
East Jersey Coast Water Co.....	No record.	275,658	.....	383,259	107,601	39.27
United Water-Supply Co.....	3,935	†342,465	393,500	462,639	69,139	25.23

* Permanent population.

† Includes supply from Little Falls and Great Falls.

The maximum charge which the Commission is empowered to levy for water diverted in excess of the legal limit is \$10 per 1,000,000 gallons, while the minimum rate named is \$1 per 1,000,000 gallons. In fixing the schedule of charges to be levied by the State the Commission has imposed the minimum rate thus far, it being the desire that the operation of the State's new policy should first be generally understood and that the charges should not fall heavily upon any of the companies or municipalities using in excess of the maximum quantity named, yet whose greater consumption is not detrimental to other communities or companies with equal rights. Not all of the companies using more than 100 gallons per capita according to the latest census and in excess of their diversion on June 17th, 1907, have been charged as yet for the surplus taken, the right of such companies to divert water in any quantity whatever being now in process of litigation and the Commission not wishing to prejudice the cause of the State by the exaction of a charge which might be construed as a license by the State for such diversion. The wording of the act is specific in this respect, it providing that payment of the sum fixed for such excess diversion "shall be deemed to be a license." In view of this the Commission has considered it best for the interest of the State to defer the levying of charges in such cases until the status of the companies shall have been determined, fearing that if the charges for such surplus diversion were fixed at this time, it might be construed as granting rights with which the companies are not now clothed.

PROPOSED LARGE DIVERSION FROM DELAWARE RIVER.

It having been brought to the attention of the Commission that application had been made to the State Water-Supply Commission of Pennsylvania by interests desiring to divert a large portion of the Delaware river flow at Walpeck Bend for power purposes, request was made of the Pennsylvania Commission on April 6th, to withhold action upon the application until such time as the Consulting Engineer of the New Jersey Commission could ascertain what damages, if any, might be sustained by property interests in this State at and below the point of diversion. This request was promptly granted and shortly thereafter the Engineer dis-

cussed the matter with representatives of the Pennsylvania Commission at Harrisburg. Subsequently, on July 26th, members of the Commission and the Engineer visited the point of the proposed diversion and were satisfied that no interests on this side of the Delaware would be prejudiced by the proposed diversion. The entire volume of water to be taken would be returned to the natural bed of the river at a point a short distance below. In view of the circumstances stated the Commission did not enter further objection to the granting of the application.

RECOMMENDATIONS AS TO NEW LEGISLATION.

We recommend that legislation be enacted as soon as the Legislature convenes which would prevent the transmission out of the State by pipes, conduits or otherwise of sub-surface or underground water.

We also recommend that sub-surface or underground waters be placed under the control of this Commission.

Several reproductions of scenes showing low flow of water and other interesting aspects of the State's supply accompany our report. In each case the descriptive text will furnish information as to the subject of the picture.

FOSTER M. VOORHEES,
GEORGE F. WRIGHT,
J. H. BACHELLER,
RICHARD MORRELL,
HARRY R. HUMPHREYS,

Members of the State Water-Supply Commission.

CHARLES H. FOLWELL,
Secretary.

MORRIS R. SHERRERD,
Consulting Engineer.

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